Notice of Allowability	Application No.	Applicant(s)	
	10/815,337	GURTU, VANESSA E.	
	Examiner	Art Unit	
	Robert A. Wax	1653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to _____.

2. ☒ The allowed claim(s) is/are *10-36,40 and 41*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 11052004, 11182004
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *12122005* .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Matthew Beaudet on December 8, 2005.

The application has been amended as follows:

1-9. (Cancelled)

10. (Original) A mutant Green Fluorescent Protein (GFP) from *Renilla reniformis*, selected from the group consisting of:

(a) the amino acid sequence of mutant GM1;

(b) the amino acid sequence of mutant GM2;

(c) the amino acid sequence of mutant GM3;

(d) the amino acid sequence of mutant GM4;

(e) the amino acid sequence of mutant GM6;

(f) the amino acid sequence of mutant T1;

(g) the amino acid sequence of mutant T6;

(h) the amino acid sequence of mutant T8;

(i) the amino acid sequence of mutant T11;

(j) the amino acid sequence of mutant T12;

(k) the amino acid sequence of mutant T13;

(l) the amino acid sequence of mutant T14;

(m) the amino acid sequence of mutant T15; and

(n) the amino acid sequence of mutant T17.

11. (Original) A polynucleotide encoding a mutant Green Fluorescent Protein (GFP) from *Renilla reniformis*, selected from the group consisting of:

(a) a polynucleotide encoding the amino acid sequence of mutant GM1;

(b) a polynucleotide encoding the amino acid sequence of mutant GM2;

(c) a polynucleotide encoding the amino acid sequence of mutant GM3;

(d) a polynucleotide encoding the amino acid sequence of mutant GM4;

(e) a polynucleotide encoding the amino acid sequence of mutant GM6;

(f) a polynucleotide encoding the amino acid sequence of mutant T1;

(g) a polynucleotide encoding the amino acid sequence of mutant T6;

(h) a polynucleotide encoding the amino acid sequence of mutant T8;

(i) a polynucleotide encoding the amino acid sequence of mutant T11;

(j) a polynucleotide encoding the amino acid sequence of mutant T12;

(k) a polynucleotide encoding the amino acid sequence of mutant T13;

(l) a polynucleotide encoding the amino acid sequence of mutant T14;

(m) a polynucleotide encoding the amino acid sequence of mutant T15; and

(n) a polynucleotide encoding the amino acid sequence of mutant T17.

12. (Original) The polynucleotide of claim 11, said polynucleotide being humanized.

13. (Original) A vector comprising the polynucleotide of claim 12.

14. (Original) A host cell containing the vector of claim 13.

15. (Original) A mutant Green Fluorescent Protein (GFP) from *Renilla reniformis*, selected from the group consisting of:

(a) the amino acid sequence of SEQ ID NO:34;

(b) the amino acid sequence of SEQ ID NO:36;

(c) the amino acid sequence of SEQ ID NO:38;

(d) the amino acid sequence of SEQ ID NO:40;

(e) the amino acid sequence of SEQ ID NO:42;
(f) the amino acid sequence of SEQ ID NO:44;
(g) the amino acid sequence of SEQ ID NO:46;
(h) the amino acid sequence of SEQ ID NO:48;
(i) the amino acid sequence of SEQ ID NO:50;
(j) the amino acid sequence of SEQ ID NO:52;
(k) the amino acid sequence of SEQ ID NO:54;
(l) the amino acid sequence of SEQ ID NO:56;
(m) the amino acid sequence of SEQ ID NO:58; and
(n) the amino acid sequence of SEQ ID NO:60.

16. (Original) A polynucleotide encoding a mutant Green Fluorescent Protein (GFP) from *Renilla reniformis*, selected from the group consisting of:
(a) the polynucleotide sequence of SEQ ID NO:33;
(b) the polynucleotide sequence of SEQ ID NO:35;
(c) the polynucleotide sequence of SEQ ID NO:37;
(d) the polynucleotide sequence of SEQ ID NO:39;
(e) the polynucleotide sequence of SEQ ID NO:41;
(f) the polynucleotide sequence of SEQ ID NO:43;
(g) the polynucleotide sequence of SEQ ID NO:45;
(h) the polynucleotide sequence of SEQ ID NO:47;
(i) the polynucleotide sequence of SEQ ID NO:49;
(j) the polynucleotide sequence of SEQ ID NO:51;
(k) the polynucleotide sequence of SEQ ID NO:53;
(l) the polynucleotide sequence of SEQ ID NO:55;
(m) the polynucleotide sequence of SEQ ID NO:57; and
(n) the polynucleotide sequence of SEQ ID NO:59.

17. (Original) The polynucleotide of claim 16, said polynucleotide being humanized.

18. (Original) A vector comprising the polynucleotide of claim 17.

19. (Original) A host cell containing the vector of claim 18.

20. (Original) A mutant Green Fluorescent Protein (GFP) from *Renilla reniformis*, selected from the group consisting of:

(a) the amino acid sequence of SEQ ID NO:4;
(b) the amino acid sequence of SEQ ID NO:6;
(c) the amino acid sequence of SEQ ID NO:8;
(d) the amino acid sequence of SEQ ID NO:10;
(e) the amino acid sequence of SEQ ID NO:12;
(f) the amino acid sequence of SEQ ID NO:14;
(g) the amino acid sequence of SEQ ID NO:16;
(h) the amino acid sequence of SEQ ID NO:18;
(i) the amino acid sequence of SEQ ID NO:20;
(j) the amino acid sequence of SEQ ID NO:22;
(k) the amino acid sequence of SEQ ID NO:24;
(l) the amino acid sequence of SEQ ID NO:26;
(m) the amino acid sequence of SEQ ID NO:28; and
(n) the amino acid sequence of SEQ ID NO:30.

21. (Original) A polynucleotide encoding a mutant Green Fluorescent Protein (GFP) from *Renilla reniformis*, selected from the group consisting of:

(a) the polynucleotide sequence of SEQ ID NO:3;
(b) the polynucleotide sequence of SEQ ID NO:5;
(c) the polynucleotide sequence of SEQ ID NO:7;
(d) the polynucleotide sequence of SEQ ID NO:9;
(e) the polynucleotide sequence of SEQ ID NO:11;
(f) the polynucleotide sequence of SEQ ID NO:13;

(g) the polynucleotide sequence of SEQ ID NO:15;
(h) the polynucleotide sequence of SEQ ID NO:17;
(i) the polynucleotide sequence of SEQ ID NO:19;
(j) the polynucleotide sequence of SEQ ID NO:21;
(k) the polynucleotide sequence of SEQ ID NO:23;
(l) the polynucleotide sequence of SEQ ID NO:25;
(m) the polynucleotide sequence of SEQ ID NO:27; and
(n) the polynucleotide sequence of SEQ ID NO:29.

22. (Original) A vector comprising the polynucleotide of claim 21.

23. (Original) A host cell containing the vector of claim 22.

24. (Currently Amended) A method of producing mutant *Renilla reniformis* GFP comprising the steps of:

(a) culturing a cell containing a recombinant vector comprising a wild type or humanized polynucleotide sequence encoding mutant *Renilla reniformis* GFP under conditions where the mutant *Renilla reniformis* GFP protein is expressed, wherein said polynucleotide sequence is selected from the group consisting of SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, SEQ ID NO:23, SEQ ID NO:25, SEQ ID NO:27 and SEQ ID NO:29; and

(b) isolating said mutant *Renilla reniformis* GFP protein from said cell, wherein said mutant *Renilla reniformis* GFP has a sequence selected from the group consisting of SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, SEQ ID NO:10, SEQ ID NO:12, SEQ ID NO:14, SEQ ID NO:16, SEQ ID NO:18, SEQ ID NO:20, SEQ ID NO:22, SEQ ID NO:24, SEQ ID NO:26, SEQ ID NO:28 and SEQ ID NO:30;

thereby producing mutant *Renilla reniformis* GFP.

25. (Currently amended)A method of producing a *Renilla reniformis* fusion protein, said method comprising the steps of: culturing a cell containing a polynucleotide sequence encoding said polypeptide of interest linked with a humanized polynucleotide encoding mutant *Renilla reniformis* GFP wherein said humanized polynucleotide is selected from the group consisting of SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, SEQ ID NO:23, SEQ ID NO:25, SEQ ID NO:27 and SEQ ID NO:29, and wherein the linked polynucleotide sequences are fused in frame, under conditions where the mutant *Renilla reniformis* GFP protein is expressed.

26. (Original) A method of determining the location of a polypeptide of interest in a cell, said method comprising determining the location of the fusion protein of claim 25.

27. (Currently amended)A method of identifying a cell into which a recombinant vector has been introduced, said method comprising the steps of:

(a) providing a cell containing a recombinant vector comprising a humanized polynucleotide which encodes mutant *Renilla reniformis* GFP, wherein said humanized polynucleotide is selected from the group consisting of SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, SEQ ID NO:23, SEQ ID NO:25, SEQ ID NO:27 and SEQ ID NO:29, and wherein said cell permits expression of said humanized polynucleotide;

(b) illuminating said population with light within the excitation spectrum of mutant *Renilla reniformis* GFP; and

(c) detecting fluorescence in the emission spectrum of mutant *Renilla reniformis* GFP in said population, where detection of fluorescence in the cell indicates that the recombinant vector has been introduced into the cell;

thereby identifying a cell into which said recombinant vector has been introduced.

28. (Original) The method of claim 27, wherein said GFP is expressed as a fusion polypeptide.

29. (Original) The method of claim 27, wherein said GFP is expressed as a distinct polypeptide.

30. (Original) The method of claim 27, wherein said cells are identified by FACS analysis.

31. (Currently amended)A method of detecting the activity of a transcriptional regulatory sequence, said method comprising the steps of:

(a) culturing a cell containing a nucleic acid sequence comprising said transcriptional regulatory sequence operably linked to a humanized nucleic acid sequence encoding mutant *Renilla reniformis* GFP to form a reporter construct, under conditions where the mutant *Renilla reniformis* GFP is expressed, wherein said humanized nucleic acid sequence is selected from the group consisting of SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, SEQ ID NO:23, SEQ ID NO:25, SEQ ID NO:27 and SEQ ID NO:29; and

(b) detecting mutant *Renilla reniformis* GFP fluorescence in said cell, wherein detection of fluorescence indicates activity of said transcriptional regulatory sequence;

thereby detecting the activity of a transcriptional regulatory sequence.

32. (Currently amended)A method of detecting the presence of a modulator of a transcriptional regulatory sequence, said method comprising the steps of:

(a) culturing a cell containing a nucleic acid sequence comprising said transcriptional regulatory sequence operably linked to a humanized nucleic acid sequence encoding mutant *Renilla reniformis* GFP to form a reporter construct, under conditions where the mutant *Renilla reniformis* GFP is expressed, wherein said humanized nucleic acid sequence is selected from the group consisting of SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, SEQ ID NO:23, SEQ ID NO:25, SEQ ID NO:27 and SEQ ID NO:29; and

(b) detecting mutant *Renilla reniformis* GFP fluorescence in said cell, wherein said fluorescence indicates the presence of said modulator;
thereby detecting the presence of a modulator of a transcriptional regulatory sequence.

33. (Currently amended)A method of screening for an inhibitor of a transcriptional regulatory sequence, said method comprising the steps of:

(a) culturing a cell containing a nucleic acid sequence comprising said transcriptional regulatory sequence operably linked to a humanized nucleic acid sequence encoding mutant *Renilla reniformis* GFP to form a reporter construct, under conditions where the mutant *Renilla reniformis* GFP is expressed, wherein said humanized nucleic acid sequence is selected from the group consisting of SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, SEQ ID NO:23, SEQ ID NO:25, SEQ ID NO:27 and SEQ ID NO:29;

(b) contacting said cell with a candidate inhibitor of said transcriptional regulatory sequence; and

(c) detecting mutant *Renilla reniformis* GFP fluorescence in said cell, wherein a decrease in said fluorescence relative to that detected in the absence of said candidate inhibitor indicates that said candidate inhibitor inhibits the activity of said transcriptional regulatory sequence.

34. (Currently amended) A method of producing a fluorescent molecular weight marker, said method comprising the steps of:

(a) culturing a cell containing a humanized nucleic acid sequence encoding mutant *Renilla reniformis* GFP linked in frame to a nucleic acid sequence encoding a polypeptide of known relative molecular weight such that said linked molecules encode a fusion polypeptide, under conditions where the mutant *Renilla reniformis* GFP is expressed, wherein said humanized nucleic acid sequence is selected from the group consisting of SEQ ID NO:3, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, SEQ ID NO:11, SEQ ID NO:13, SEQ ID NO:15, SEQ ID NO:17, SEQ ID NO:19, SEQ ID NO:21, SEQ ID NO:23, SEQ ID NO:25, SEQ ID NO:27 and SEQ ID NO:29;

(b) isolating said fusion polypeptide from said cell, wherein said fusion polypeptide is a relative molecular weight marker.

35. (Original) The method of claims 24, 25, 27 or 31-34, wherein said cell is a mammalian cell.

36. (Original) The method of claims 24, 25, 27 or 31-34, wherein said cell is a human cell.

37-39. (Cancelled)

40. (Original) A mutant Green Fluorescent Protein (GFP) from *Renilla reniformis*, wherein the mutation comprises an amino acid substitution at one or more of the following residues:

(a) F43;

(b) E120;

(c) L101; and

(d) Y103.

41. (New) The mutant GFP of claim 40, wherein said mutation is E120G.

2. The following is an examiner's statement of reasons for allowance: the closest prior art is Sorge et al. (Reference 2 on the IDS filed November 18, 2004) who teach mutants of *Renilla* green fluorescent protein but the only sites for the mutations are around amino acids 64-69, far from the mutation sites claimed in the instant application. Mutants of green fluorescent protein from *Aequorea victoria* have been disclosed, however, it is considered only obvious to try to make similar mutations in *Renilla* green fluorescent protein since the expectation of success is limited. Therefore, the instant claims, as amended, are allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Drawings

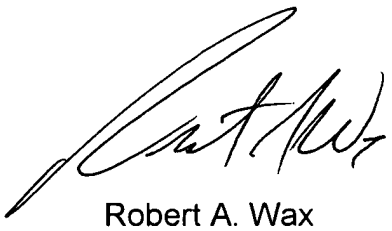
3. The drawings received on April 1, 2004 are accepted by the examiner.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Wax whose telephone number is (571) 272-0623. The examiner can normally be reached on Monday through Friday, between 9:00 AM and 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon P. Weber can be reached on (571) 272-0925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Robert A. Wax
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